

DETERMINING THE MARKET
FOR THE LOCKHEED
DISTRIBUTED GRAPHICS SYSTEM

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DETERMINING THE MARKET
FOR THE LOCKHEED
DISTRIBUTED GRAPHICS SYSTEM

PRESENTED TO:
THE LOCKHEED CALIFORNIA COMPANY
NOVEMBER, 1980

BY:
INPUT
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SUMMARY OF PRESENTATION

- KEY ISSUES
- USERS EVALUATION OF CADAM
- DESIRED FEATURES OF LDG SYSTEM
- MARKETABILITY OF LDG SYSTEM
- EVALUATION OF VENDORS' PROPOSALS
- SUMMARY OF RECOMMENDATIONS

KEY ISSUES

- DETERMINE THE MARKETABILITY OF LDG SYSTEMS TO PRESENT CADAM USERS.
 - MINICOMPUTER BASED
 - MICROCOMPUTER BASED
- PROJECT THE MARKET FOR LDG SYSTEMS FOR PRESENT CADAM USERS.
- EXAMINE THE ROLE OF PRESENT CAD/CAM TURNKEY VENDORS IN THIS MARKET.
- EVALUATE THE PROPOSALS OF PROSPECTIVE TURNKEY VENDORS OF LDG SYSTEMS.

USERS EVALUATION OF CADAM

CADAM LDG INTERVIEW PROGRAM

NUMBER OF RESPONDENTS	TYPE OF COMPANY	TELE- PHONE ON- SITE	NUMBER OF RESPONDENTS	SIZE OF COMPANY
3	AEROSPACE	2 1	4	>\$1B
7	MANUFACT- URING MECHANICAL	7 0	2	\$500- 1,000 MM
2	MANUFACT- URING ELECTRICAL	1 1	4	\$100- 500 MM
12 TOTAL	-	10 2	2	<\$100 MM

TOTAL NUMBER OF RESPONDENTS = 12
(MEMBERS OF CADAM USERS EXCHANGE)

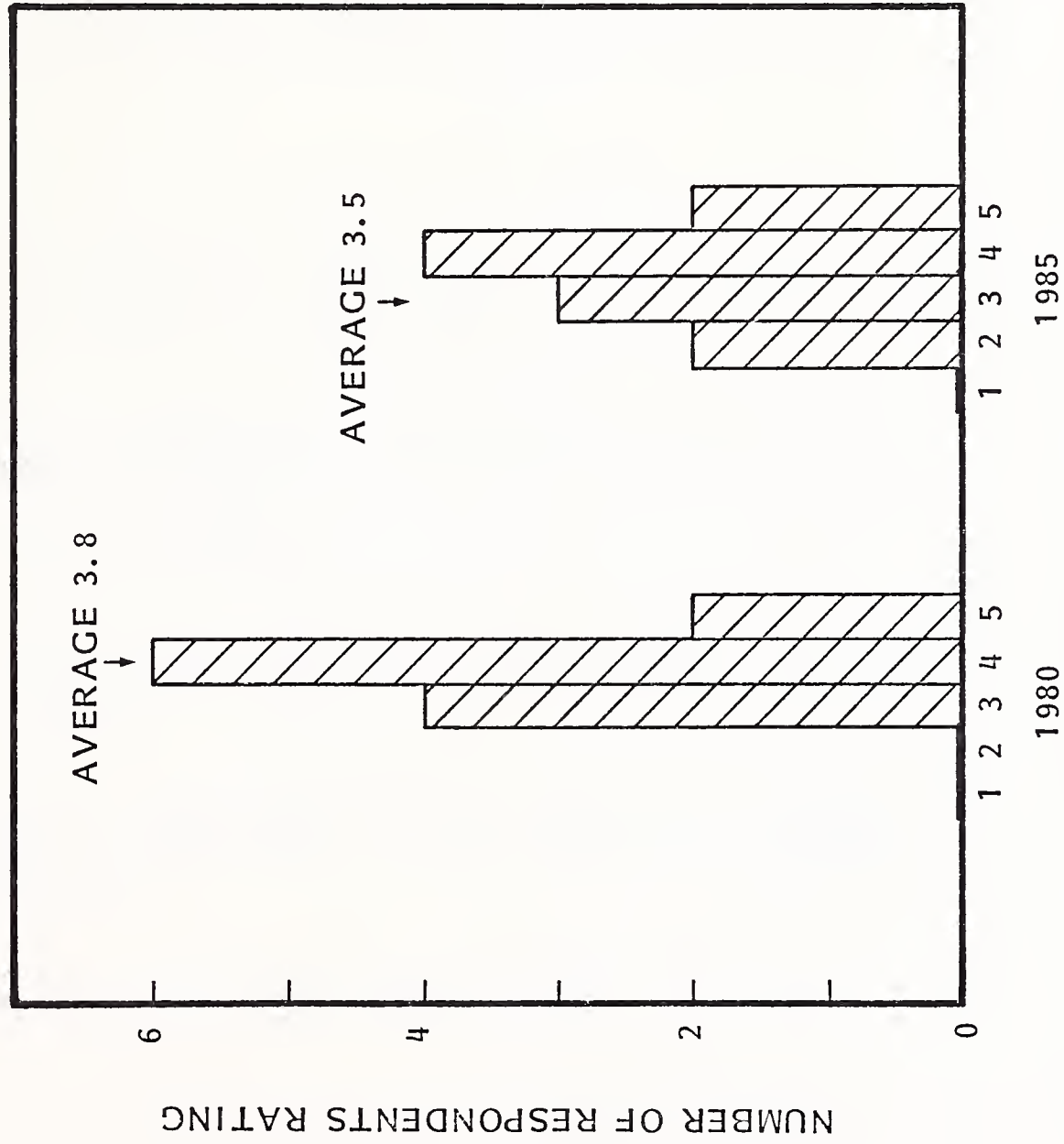
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PRESENT CADAM SYSTEM INSTALLATIONS

NUMBER OF			
RESPON- DENTS	STATIONS	TERMINALS	TERMINALS / STATION
12	70	130	1.9

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USERS RATINGS OF THE OVERALL ADEQUACY OF
CADAM SOFTWARE - NOW AND IN 1985



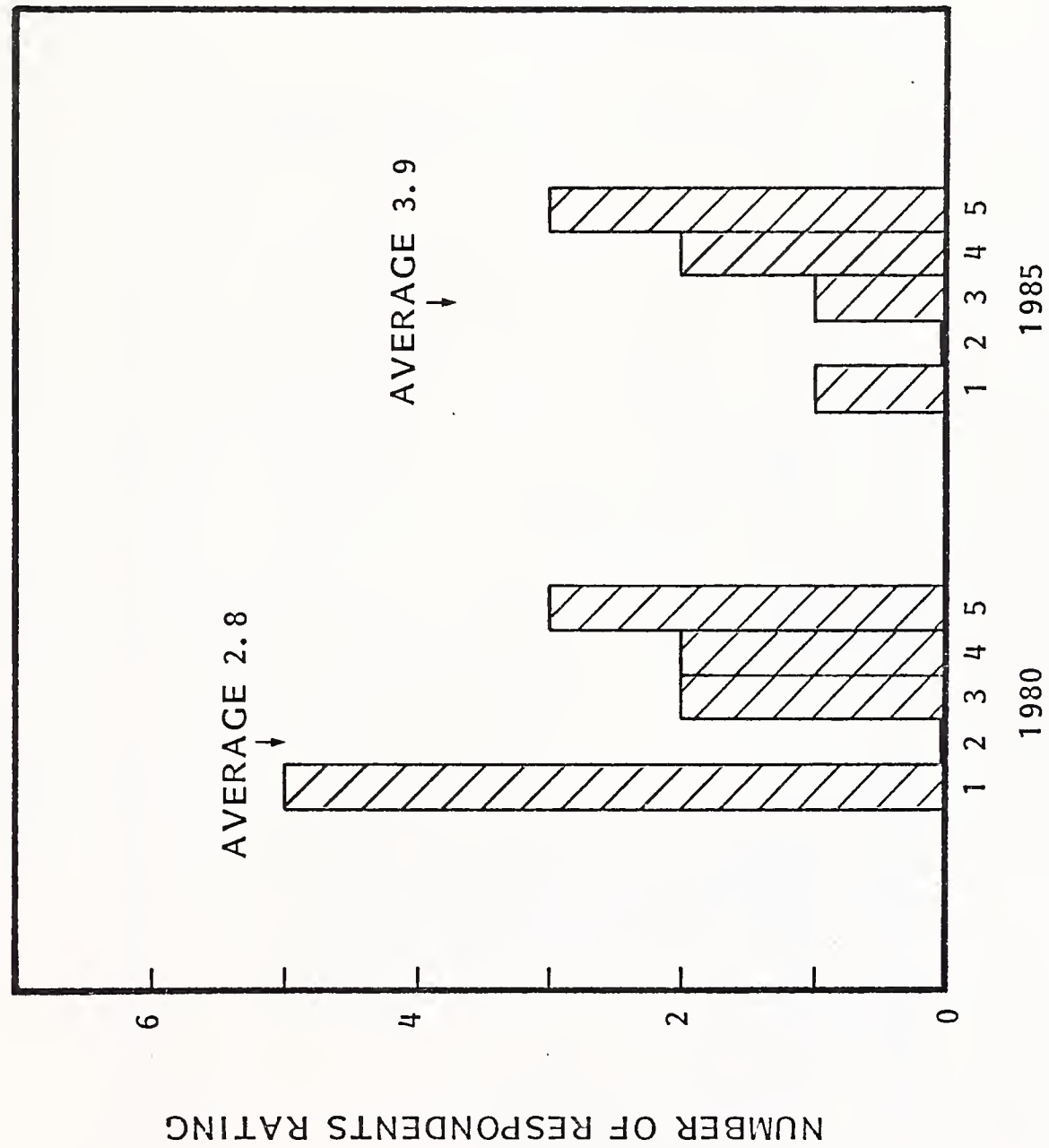
RATED ON A SCALE WHERE 5 IS COMPLETELY SATISFACTORY AND 1 IS
UNSATISFACTORY

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RESPONDENTS TYPICAL COMMENTS CONCERNING THE
PRESENT ADEQUACY OF CADAM SYSTEM SOFTWARE

- "TOO EXPENSIVE TO MAKE COST EFFECTIVE OVERALL -
MANAGEMENT IS UNWILLING TO EXPAND THE SYSTEM."
- "DOES A GOOD JOB AS CURRENTLY DESIGNED, THE
SYSTEM IS AHEAD OF THE ORGANIZATIONAL CAP-
ABILITY TO USE IT."
- "I CAN'T BRAG ABOUT IT, BUT I CAN'T CRITICIZE
IT EITHER."
- "DESPITE PROBLEMS, IT HAS GIVEN US A GOOD
PAYBACK."
- "WE ARE VERY HAPPY WITH IT."

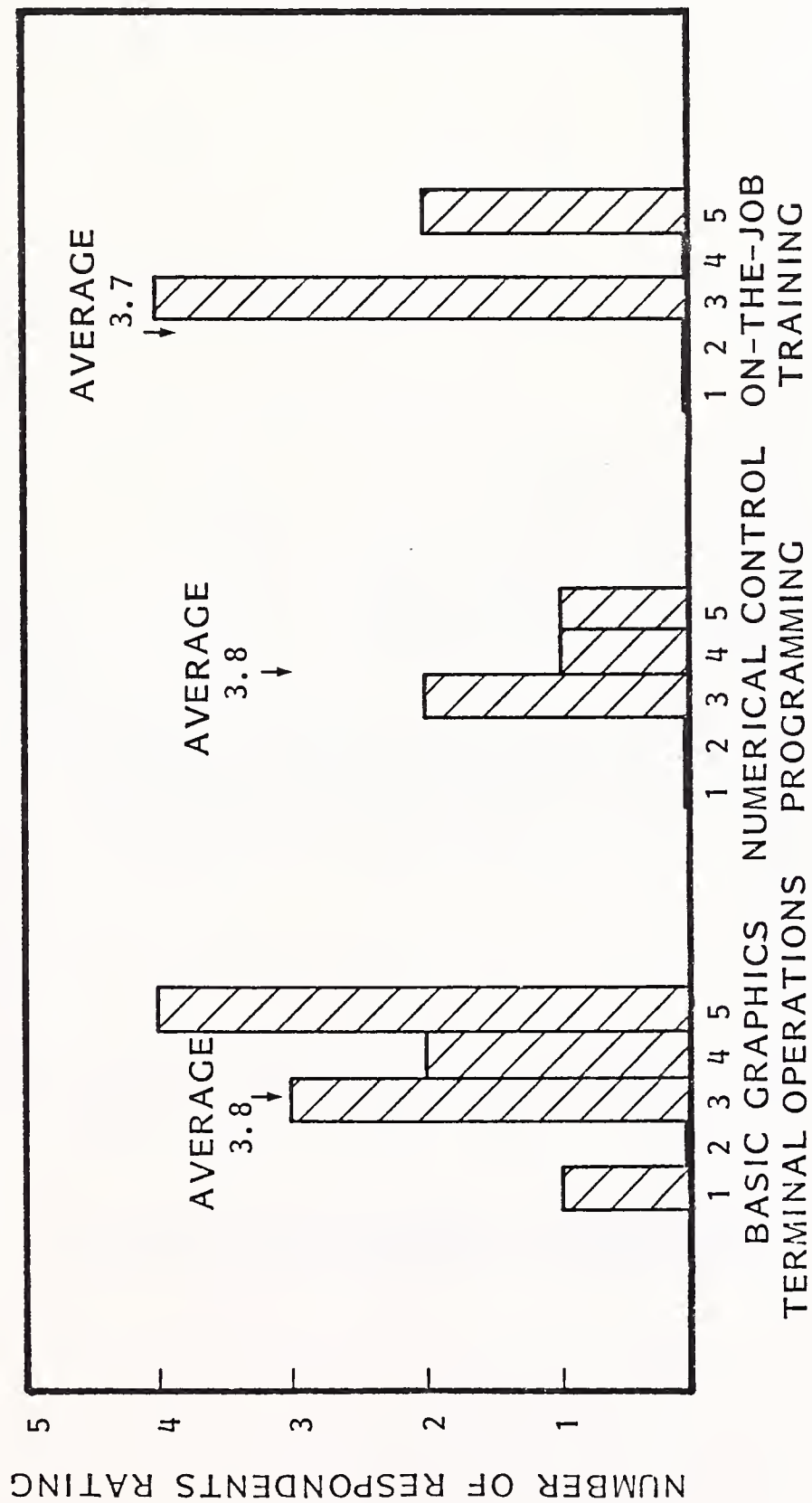
USERS RATINGS OF CADAM SYSTEMS RESPONSE TIMES
PROBLEMS - NOW AND IN 1985



RATED ON A SCALE WHERE 5 IS NO PROBLEM AT ALL AND 1 IS A MAJOR PROBLEM

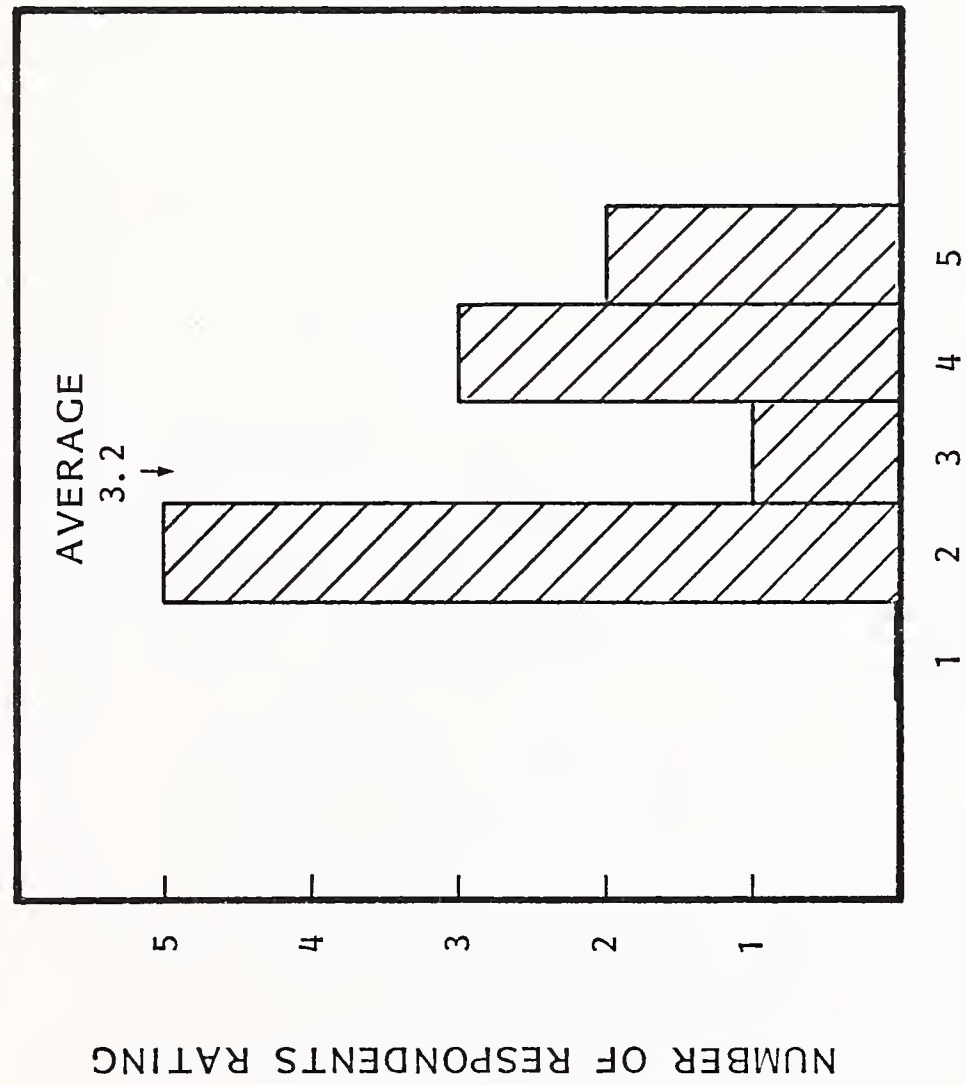
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USERS DEGREE OF SATISFACTION WITH THE CADAM TRAINING COURSES



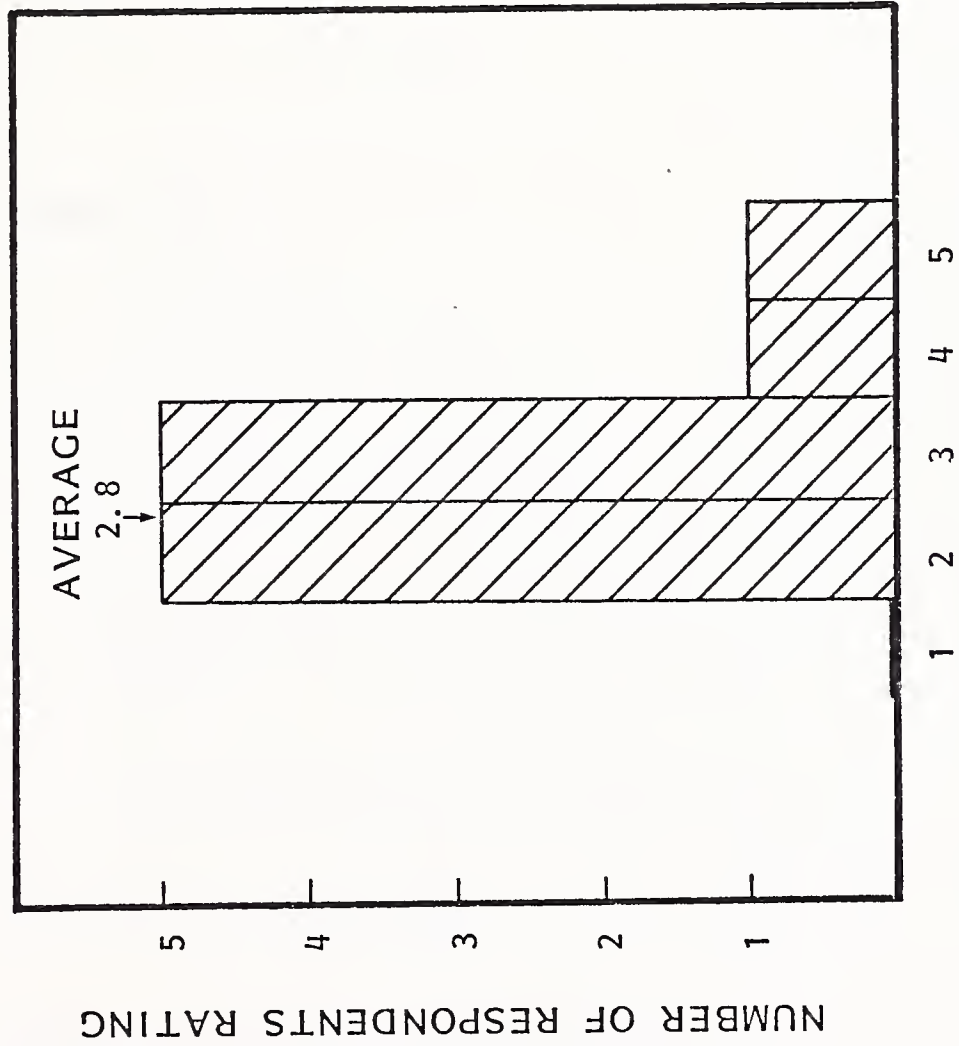
RATED ON A SCALE WHERE 5 IS COMPLETELY SATISFACTORY AND 1 IS UNSATISFACTORY

USER'S SATISFACTION WITH CADAM TRAINING DOCUMENTATION



RATED ON A SCALE WHERE 5 IS COMPLETELY SATISFACTORY AND 1 IS UNSATISFACTORY

USER'S SATISFACTION WITH CADAM SYSTEM USER SUPPORT



RATED ON A SCALE WHERE 5 IS COMPLETELY SATISFACTORY AND 1 IS UNSATISFACTORY

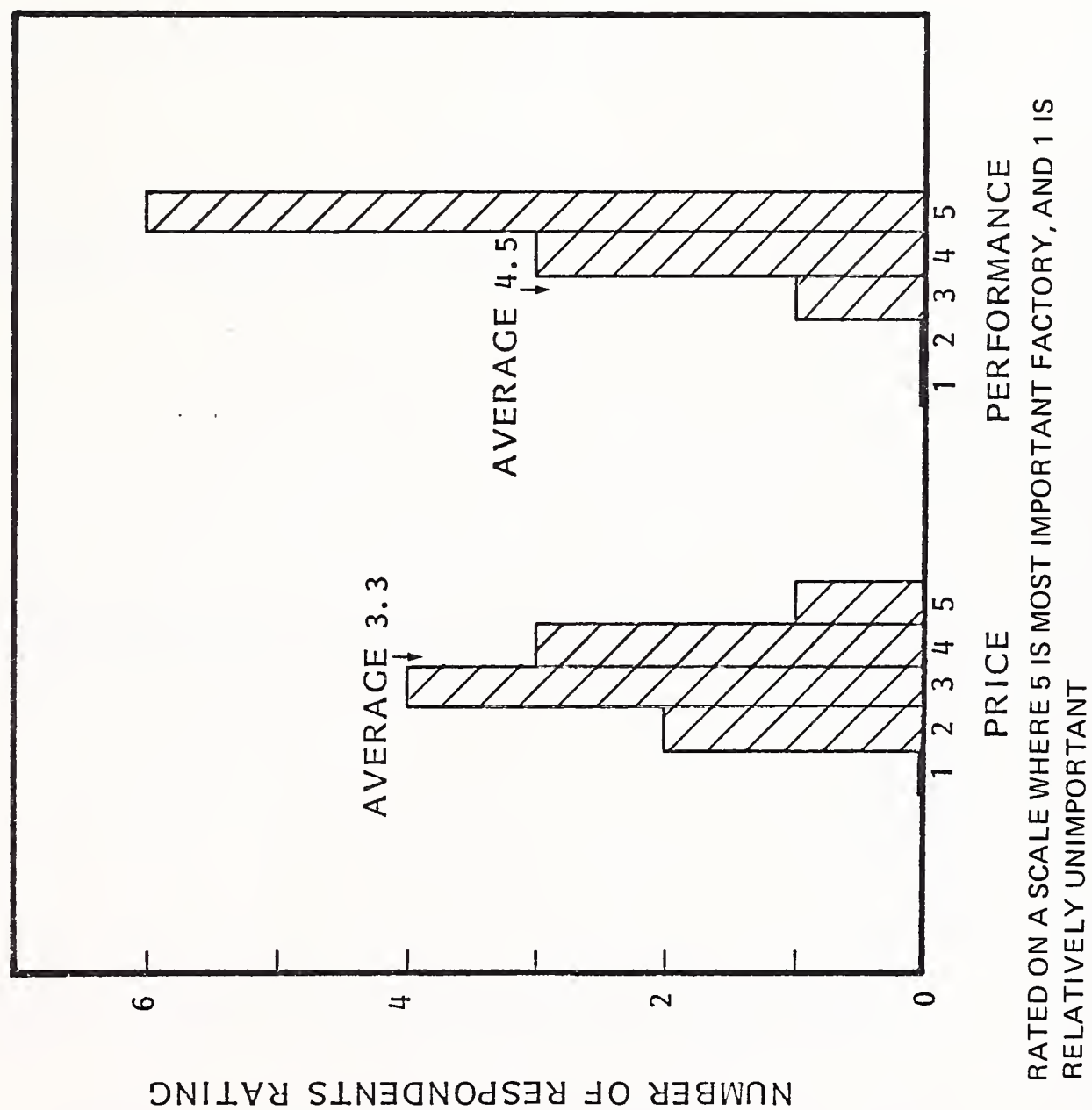
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USER'S SUGGESTIONS FOR NEW CADAM SOFTWARE
ENHANCEMENTS, SUPPORT PACKAGES AND NEW
APPLICATIONS

- IMPROVED:
 - 3D CAPABILITY
 - NUMERICAL CONTROL
 - STATISTICAL DATA AND
REPORT GENERATION
 - NEW RELEASE DEBUGGING
- VM/CMS CONVERSION
- COMMON GRAPHICS STANDARDS

DESIRED FEATURES OF LDG SYSTEM

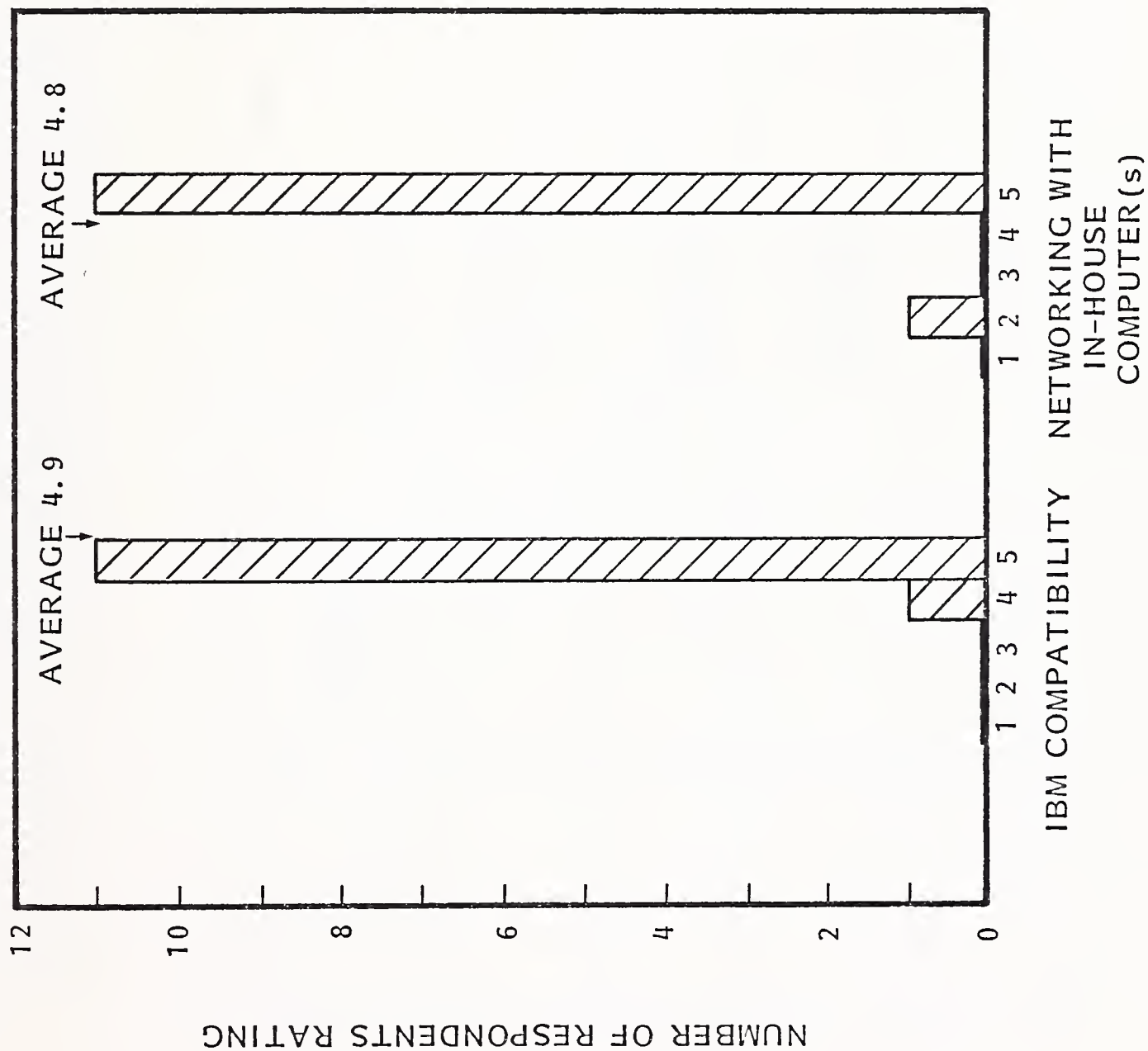
RELATIVE IMPORTANCE OF PRICE VERSUS PERFORMANCE
IN BUYING TURKEY SYSTEMS AS RATED BY RESPONDENTS



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IMPORTANCE OF IBM COMPATIBILITY AND NETWORKING WITH
IN-HOUSE HOST COMPUTER(S) AS RATED BY RESPONDENTS



RATED ON A SCALE WHERE 5 IS ESSENTIAL AND 1 IS UNIMPORTANT

INPUT

USERS RANKING OF REQUIREMENTS FOR FIELD SERVICE

ORDER	AVERAGE RANKING	REQUIREMENT
1	1.6	EIGHT HOUR RESPONSE
2	2.4	TWENTY FOUR HOUR RESPONSE
3	2.7	CUSTOMER RESPONSE
4	2.9	ON-SITE

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MARKETABILITY OF LDG

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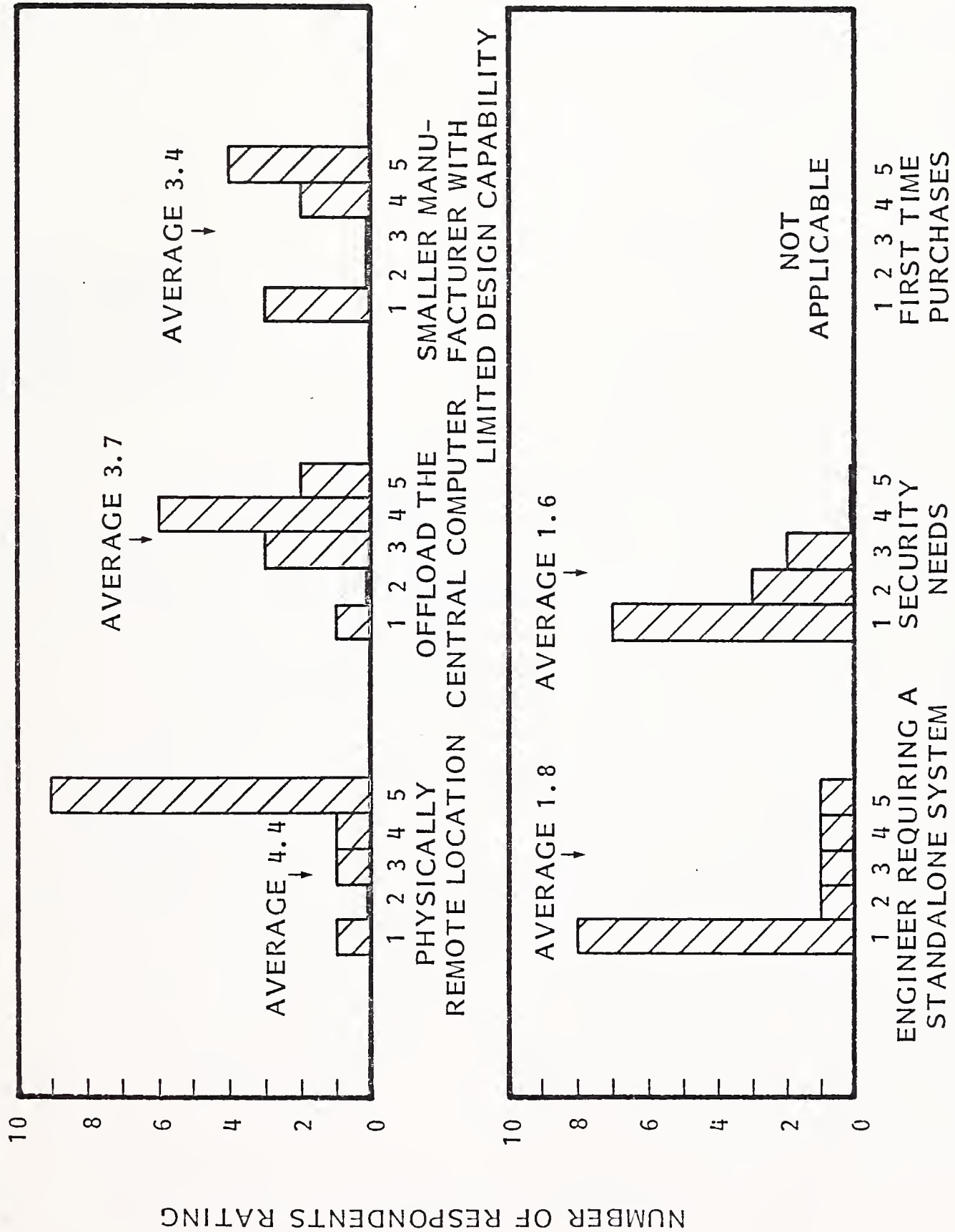
THE DEGREE OF USER INTEREST IN EXTENDING CADAM BY
MEANS OF TURNKEY DISTRIBUTED GRAPHICS SYSTEMS

DEGREE OF INTEREST	NUMBER OF RESPONDENTS	PERCENT OF RESPONDENTS
VERY INTERESTED	9	53%
WOULD LIKE TO CONSIDER	3	17
MODERATELY INTERESTED	0	0
LITTLE INTEREST	0	0
NO INTEREST AT ALL*	5	30
TOTAL	17	100%

*INTERVIEWS TERMINATED
NUMBER OF RESPONDENTS = 17

INPUT

MOST IMPORTANT REASONS FOR BUYING CADAM DISTRIBUTED
GRAPHICS TURKEY SYSTEMS AS RATED BY RESPONDENTS



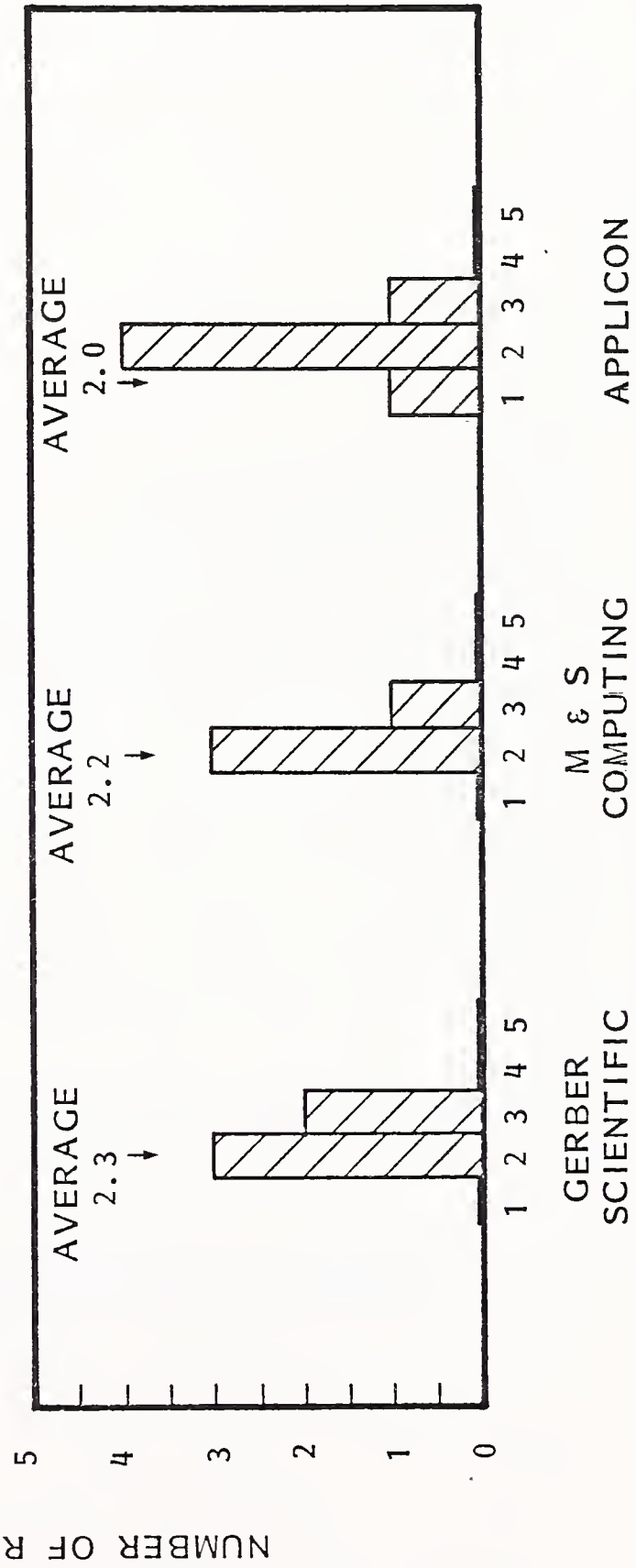
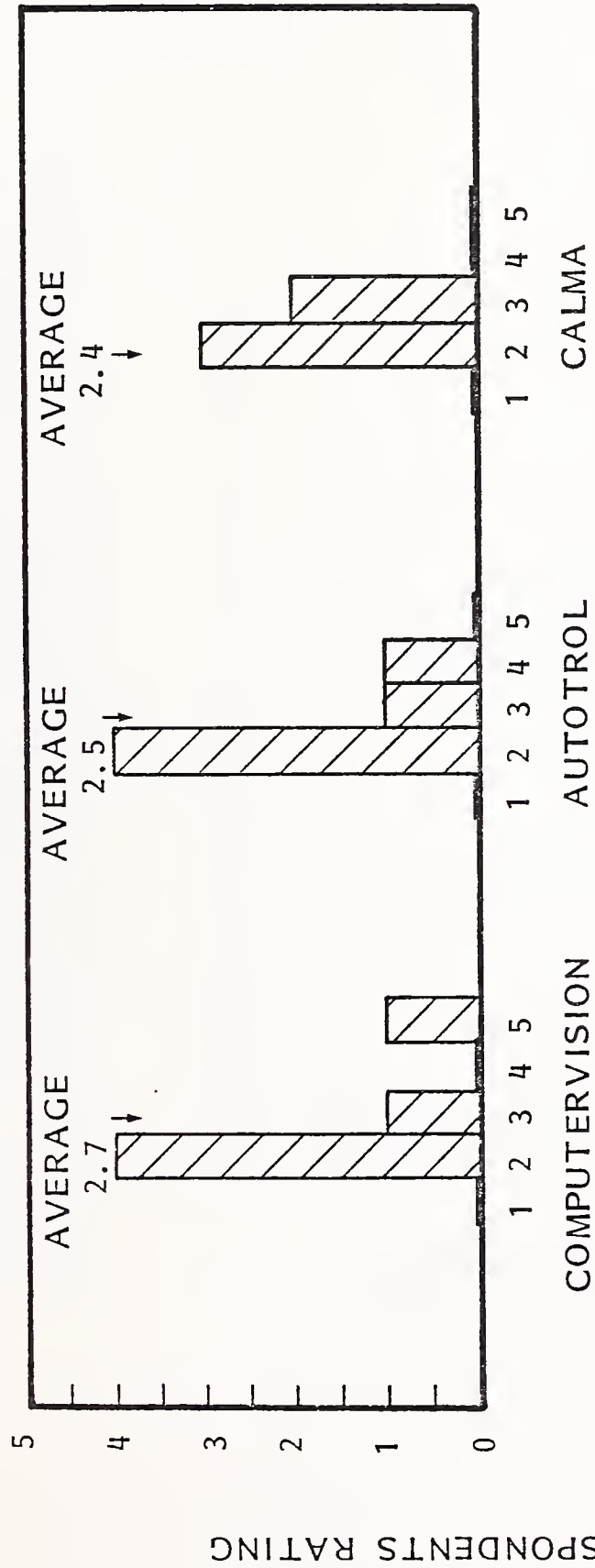
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BUYING PATTERNS

- MULTIPLE LOCATIONS
- MODE OF DELIVERY
- LEASE/PURCHASE

INPUT

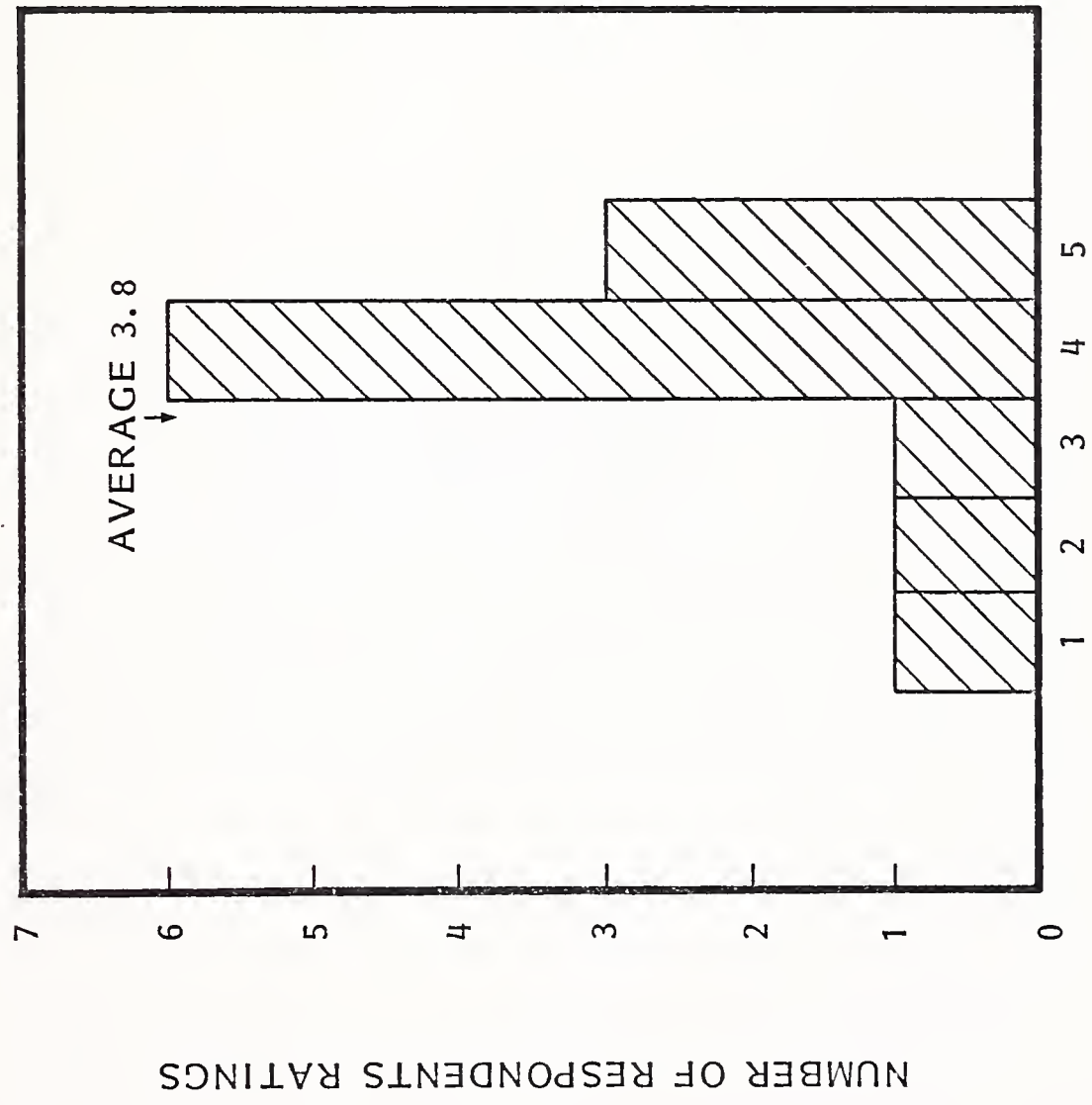
ADEQUACY AND PERFORMANCE OF EXISTING CAD/CAM TURKEY VENDORS IN MEETING PRESENT USER'S NEEDS AS RATED BY RESPONDENTS



NUMBER OF RESPONDENTS = 6 OF 12

INPUT

THE NEED FOR DISTRIBUTED GRAPHICS TO REALIZE
THE FULL CADAM POTENTIAL AS RATED BY RESPONDENTS



RATED ON A SCALE WHERE 5 IS CRITICAL AND 1 IS NOT IMPORTANT

INPUT

MARKET PROJECTIONS

INPUT

NUMBER OF POTENTIAL CADAM MINICOMPUTER BASED, TURNKEY
SYSTEMS IDENTIFIED BY RESPONDENTS, 1980-1985

\$150,000 MINICOMPUTER - BASED TURNKEY - INSTALLATIONS	YEAR	
	1980	1985
NUMBER OF POTENTIAL INSTALLATIONS	28	65
AVERAGE NUMBER OF POTENTIAL INSTALLATIONS PER RESPONDENT	2.3	5.4

NUMBER OF RESPONDENTS = 12

INPUT

MARKET PROJECTIONS \$150,000 TURNKEY SYSTEMS
TO CADAM USERS

ASSUMPTIONS:

- 65 CADAM LICENSEES NOW
- GROWING 10%/YR
- 30% OF CADAM USERS HAVE NO INTEREST
- RESULTS OF STUDY EXTRAPOLATE TO
TOTAL CADAM USERS
- \$25,000 CADAM LICENSE FEE INDEXED TO
TURNKEY PRICE - GROWING 10%/YR

PROJECTIONS:

	YEAR 1	YEAR 5
REVENUE TO LOCKHEED	\$500K	\$5M

EVALUATION OF VENDORS PROPOSALS

INPUT

DESIRED CHARACTERISTICS OF VENDOR

- MANUFACTURER, NOT A SYSTEMS INTEGRATOR
 - PROFITABILITY
- FINANCIAL STRENGTH
- ESTABLISHED FAVORABLE IMAGE
- COMMITMENT TO THE PRODUCT
- MARKETING CAPABILITY
- STRENGTH IN FIELD SERVICE
- COMMUNICATIONS
- PROXIMITY

INPUT

CALCOMP

- 1980 SANDERS COMPUTER GRAPHICS SALES WERE \$118MM.
- MICROCOMPUTER BASED AUTOMATED DRAFTING SYSTEMS
 - 1 TERMINAL
- \$50,000 TURNKEY
- COMPETITION
 - NICOLET CAD
 - SUMMAGRAPHS
 - MDSI
 - ENGINEERING SYSTEMS, INC.
- NOT FOR CADAM USERS
- STATUS
- CONCLUSIONS

INPUT

ADAGE

- \$10M PER YEAR COMPANY
- PLUG COMPATIBLE CAD/CAM
 - 2-6 TERMINALS
- \$400,000 TURNKEY
- COMPETITION
 - COMPUTERVISION
 - APPLICON
 - CALMA, ET.AL.
- STATUS
- CONCLUSIONS

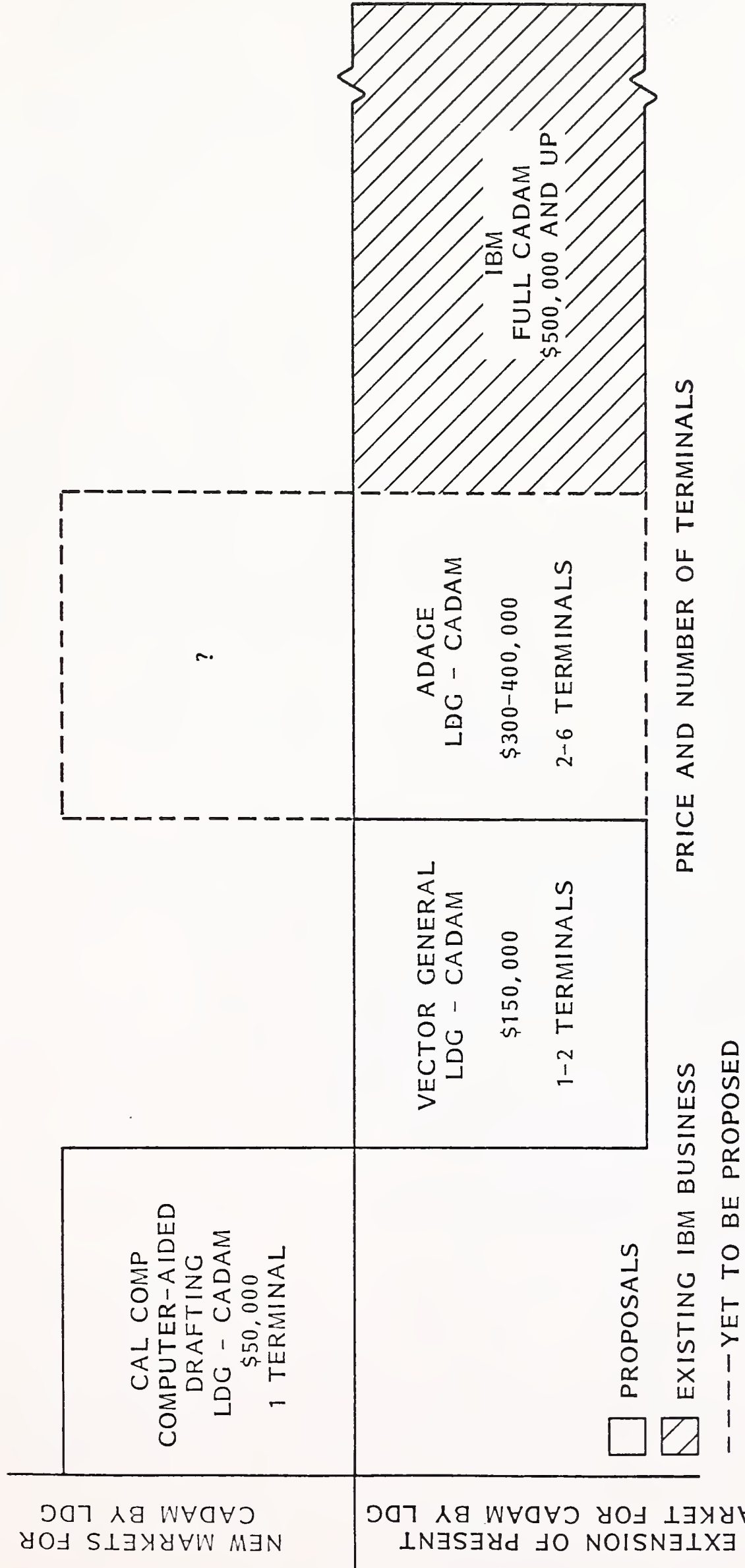
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VECTOR GENERAL

- \$9 MM PER YEAR COMPANY
- RESTRUCTURED/TURNAROUND COMPANY
- FINANCIAL PLAN
- MINICOMPUTER BASED CADAM
 - 1-2 TERMINALS
- EXISTING CADAM USERS
- COMPETITION
 - NOT STRONG
 - EXTENSION OF CADAM
- MARKET PROJECTIONS
- STATUS
- CONCLUSIONS

INPUT

SPECTRUM OF CADAM OFFERINGS



INPUT

RECOMMENDATIONS

- ENTER THE MARKET FOR LDG TURNKEY SYSTEMS
 - TARGET BOTH PRESENT CADAM USERS AND NEW USERS
 - EMPHASIZE PLANNED ENHANCEMENTS
 - DEVELOP COST EFFECTIVENESS DATA
- CONTINUE WITH VECTOR GENERAL NEGOTIATIONS TO ARRIVE AT A TENTATIVE LETTER OF AGREEMENT
 - REVIEW VECTOR GENERAL'S FINANCIAL PLAN
 - REVIEW UPDATED PLANNING DOCUMENT
 - INDEX ROYALTIES WITH FUTURE TURNKEY PRICING
 - CONSIDER FUTURE NEED FOR EXCLUSIVITY
- CONTINUE DISCUSSIONS WITH CAL COMP, BUT AVOID MAKING A COMMITMENT UNTIL:
 - THE PLAN IS DOCUMENTATED AND APPROVED BY BY CAL COMP CORPORATE MANAGEMENT
 - THE RESULTS OF THE PROPOSED MARKET RESEARCH STUDY ARE KNOWN
 - THE CAL COMP VALIDATION PROGRAM IS COMPLETE
- CONDUCT A BROADER STUDY SEEKING A STRONGER PARTNER
 - LARGER COMPANY
 - MULTINATIONAL
 - STRONG IN MANUFACTURING
 - IBM COMPATIBLE

INPUT

